Nelson Forest Region

Forest Sciences Strategic Plan

May 2000

Abstract

This strategic plan describes goals, objectives and strategies for the Forest Sciences Section of the Nelson Forest Region, all of which are consistent with the Ministry Business Plan. Strategies are presented to deal with key issues, some of which include:

- using an advisory group (FSAG) to prioritize and approve the annual program of the Section
- seeking proposals to acquire outside funding for NFR priorities, via a the new SCBC/FRBC funding cycle expected in the fall of 2000
- dealing with staff support and expertise gaps in two areas
- developing more effective consulting support to districts and industry
- use of the "severity and extent" approach to prioritize work

Longer-term issues include the need to demonstrate good stewardship and sustainable forest management under the environment of increased scrutiny of Ministry policy, legislation, and permit approvals.

Appendices include a 2000/01 work plan, an environmental scan and more detailed lists of priorities and information needs.

1. The Role of Forest Sciences in the MoF

Forest research and resource surveys, and extension have occurred in the Nelson Region since the mid-1950's. Over the past three years the Ministry's Forest Sciences / Research Program has been reviewed at both headquarters and regional levels. All reviews confirm the role of a forest sciences program as a foundation for the ministry's stewardship mandate. The reviews also identify the need for changes in program content, delivery, and accountability, to ensure that client needs for scientifically based information are met in the most efficient manner. This plan formalizes a way of doing business with finite resources, in a climate of increasing demands.

2. Goals

A. Achieve its mission statement to: "Manage and conserve the province's forest and range resources in a manner that balances economic, ecological and social benefits for all British Columbians."

B. Support the Ministry's vision that "*The British Columbia Forest Service is universally recognized as a leader in sustainable management of forests and grasslands.*"

C. Work with management and operational staff to provide innovative solutions to the increasingly complex, high impact resource management problems in British Columbia, specifically in the Nelson Forest Region.

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D. Develop and maintain a balanced program of operational consultation, applied research and extension that focuses on priorities consistent with the above goals.

E. Maintain visible and effective research at the regional level.

This plan recognizes that applied, excellent science is fundamental to MoF credibility in resource management disputes, FPC challenges, evolution of the FPC, effective forest policy, and attracting outside resources to our region. It also recognizes that *known* provincial government researchers are at the top of the list of important information sources for our clients, according to the SIFERP Client Needs Survey.

3. Objectives

A. Participate in, and initiate, processes that promote the evolution and development of legislation, policy, and various management tools:

- Provide expertise for FPC interpretations as well as input to the Leg. and Policy Task Force and the Regional Implementation Team.
- Develop local resource management guides and field handbooks for common problems.
- Collaborate with Research Branch and other regions to address key FPC information gaps.

B. Maintain a core complement of staff expertise, core funding, and a network of key study sites ("gems") to address strategic and operational information needs and test/demonstrate sustainable resource management.

- Provide technical support, mentorship, and coordination for District Earth Scientists.
- Long-term research installations are a necessary element to the program.
- Short-term benefits from the program are equally important.

C. Contribute to the resolution of resource planning conflicts and operational constraints, and identify emerging issues by maintaining operational expertise.

- Work collaboratively to help develop decision guides for common resource management problems.
- Develop training and District visits to help address high priority operational issues.
- Work with management to address risk management issues, as required.
- Provide expert advice during crisis situations and on resource planning issues, such as through Erosion Control Team, Slocan Valley Technical Team, etc.

D. Maintain a responsive and balanced program.

- Program review and approval by a management committee (FSAG).
- Annual Business Plan update based on new information and management priorities.
- Products will be produced in a timely manner and address both extension and scientific communities.
- District tours, information needs assessments, and FSAG/RMT presentations to keep RMT/DMT "in the loop".

E. Maintain credibility of the Ministry Forest Science / Research program.

- Pursue scientific excellence and continued funding by publishing results for worldwide exposure.
- Develop a learning culture in collaboration with operational staff (adaptive management, support operational trials under RMPs).
- Professional response toward initiation of projects, their analysis and documentation, and peer review.
- Present papers at major conferences to gain worldwide exposure for our resource management practices.

- Encourage scientists to participate in academic institutions and attract outside researchers to address our problems and knowledge gaps.
- Maximize collaboration with other agencies, Universities, and NGOs such as SIFERP.

4. Strategies

A. Funding:

In 1995 Forest Sciences submitted a number of research proposals to SCBC/FRBC to fund work on NFR priorities. This effort was quite successful, and obtained roughly $3 million over a five year period. By 2000/01 progressive cutbacks in core funding resulted in these grants providing 85 % of the non-salary operating funds, while only 15% of the operating budget came from the main vote. In the fall of 2000 a new SCBC/FRBC call for proposals is expected, and the Section must either succeed or be faced with a catastrophic loss of operating funds in April, 2001. To meet this impending deadline, the NFR Forest Sciences Section must:

- Develop and promote a long term funding vision to help ensure short term NFR research needs and long-term strategic issues are addressed.
- Given current complement and regional priorities, the NFR should seek approximately $ 1 M / annum, for the combined total of vote and external funding.
- Gaps in funding, expertise and extension can be partially filled with collaboration and partnerships with other groups and agencies (eg. TFL holders, community forest licenses, EFMPP/IFPA, CFS, CBFWCP, CMI, Universities).

B. Staffing. Over the past two years, the salaries of three regular employees in the Section have been funded through SCBC to alleviate staff reductions elsewhere in the Region. While this arrangement has provided the Section with additional technical support, it must be renewed by April 2001. Accordingly, there is risk to these three SCBC-funded positions, although the individuals are fully protected by the collective agreement. Additionally there are also gaps in current staff expertise. Therefore the Section must:

- Develop a funding strategy by October 2000, to provide adequate technical, coop and administrative to the section, using external grants.
- As first priority, restore a core, senior technician position to help maintain key climate monitoring and installations.
- As a second priority, fill gaps in staff expertise beginning with a wildlife habitat ecologist.
- Maintain a "mixed staffing model" in other areas, whereby basic positions are core funded and extra positions are added as long-term funding opportunities arise. This model may include post-Doctoral fellows and graduate students as well an co-op students and regular staff.

C. Key long-term research installations ("Gems").

Long-term research installations represent large investments in integrated projects. They typically involve more than one discipline or agency, and form the scientific basis for future management and policy decisions. These projects have sound, peer reviewed experimental design and may be unique or networked installations that represent regionally important conditions. As these "gems" will be important into the foreseeable future, the Section must:

- Safeguard, maintain, and regularly report on these studies.
- Address funding risks over time, to include developing contingency plans for maintenance and monitoring, such as district/licensee cooperation/help.

- Develop and maintain a test site directory, database, and map locations that clearly identify key installations
- Maintain at least one key installation per District to share the workload, as well of the benefits, amongst districts
- A preliminary list of long-term projects controlled by the Forest Sciences Section, is shown in Appendix J.

D. Strategic Issues

Historically the Section has not demonstrated strong linkage between research, operational practices and forest estate analysis. Building on the recent experiences of the AAC Mitigation and KBLUP-IS projects, this issue will be examined in 2000/01. Future work will include the incorporation of genetic gain into wood supply models, zonation, ERDZ-T and a general examination of where current Forest Sciences studies can be linked to forest estate models.

E. Efficient Consulting Support to the Districts:

In recent years, regional specialists have found it difficult to meet all requests for consultation. Are there more effective ways to pair district and regional staff on routine consulting calls? The Slocan Valley Technical Team is suggesting a two-level approach to deal with a) initial office and aerial examinations of proposed development plans, and b) ground inspections of sensitive SPs. The SVTT prefers group field days in which several regional engineering and Forest Sciences specialists team up with district and industry staff, to troubleshoot development plans and contentious openings. The Section needs to consider the SVTT and alternative approaches, in the context of efficiency, risk management and professional accountability.

F. Forest Science Advisory Group (FSAG) and Program Approval

This advisory group consists of Regional and District management who work with Forest Sciences to ensure NFR priorities and information gaps are understood by both parties, and regional budgets reflect FSAG advice and decisions. FSAG work includes:

- Review the Strategic Plan, the Business Plan, and the submission to the Budget Committee
- Approve the plans and relay them and other issues to the RMT and budget committee.

G. Prioritisation of work

All work within individual disciplines will be ranked annually. Key features include:

- Use of the concept of "severity and extent" to prioritize issues and projects.
- EXCEL spreadsheets are used to plan time and demonstrate program balance and priorities
- An annual report will be prepared by each discipline to demonstrate priority focus.
- A list of key district priorities is contained in Appendix J.

5. Conclusions:

This strategic plan presents a flexible but effective framework for the management and deployment of the NFR Forest Sciences Section over the next few years. As described, the Plan supports of both the Ministry's Business Plan and the NFR districts in their day-to-day business. The Plan also provides for a focussed research program that will help address some of the major forest management issues now facing the forest industry in the southern interior.

Endorsement by management will allow the Section to aggressively pursue the priorities of the Nelson Forest Region.

Approvals:

Submitted, on behalf of Forest Sciences **by**

Mike Curran, Research Coordinator

John Pollack, Forest Sciences / Strategic Issues Manager

Approved, on behalf of FSAG and RMT, by

Mike Gersler, Regional Staff Manager

Ross Tozer, Regional Manager

Appendices

A. 2000/01 Program

Regionally:

Consult RMT on more efficient field review methods for earth science / engineering
Increase support for District Earth Scientists via base funding and coordination
Submit SCBC proposals for "new" projects in October 2000
Meet all SCBC reporting requirements on "old" projects by April 2001

Ecology

80/20 split between consulting/extension and research
Focus on BEC linework updates in districts, LUP OGMA support, structural definition of old growth, and TEM/PEM support
Products:

Standards agreements for Ecosystem Mapping projects
Extension Note on structural definition of old growth in ICHmw2 and dw
Extension Note on BEC linework update implications in Arrow and Columbia
SOP for Land Use Planning OGMA deployment
Paper on old growth structural definition in ICH

Geomorphology

50/50 split between consulting/extension and research
Focus on district consulting, terrain stability, sediment in water, SCBC project completion
Products:

2 papers in the proceedings of the IWAP Conference held at SISCO, 1999.
Extension Note on Road Erosion Project
Extension Note on terrain stability/ESA netdown for TSR
report on the WADF sediment project
report on the Landslide inventory project

Hydrology

50/50 split between consulting/extension and research
Focus on district consulting, effects of forest management on water quality and quantity, SCBC project completion
Products:

Proceedings and 2 papers from the IWAP Conference held at SISCO, 1999
1 report on H60
1 report on Matthew Creek water quality
1 report on greenup at Trapping Creek
provincial quality control on IWAP and water quality monitoring

Soil Science

50/50 split between consulting/extension and research
Focus on district consulting, site disturbance, long term soil productivity, calcareous soils, skidroad rehabilitation
Products:

1 land management handbook for SPs
5 extension notes of long term soil productivity trials, Whitetail and Nine Mile projects, skid road rehabilitation site indicators and hand texturing.
1 report on partial cutting / road removal trial at Golden/Arrow.

Strategic Issues:

100% to applied projects
Focus on the innovative use of forest estate models and research information to address complex NFR planning issues.
Products:
IFPA coordination
ERDZ T coordination
Results Based Code Pilot Project coordination
Spatial Analysis coordination
2 report on the use of genetically improved seed in the NFR
7 map products related to ERDZ T
2 spatial forest estate analyses (pending HLP decision)

Silvicultural Systems

50/50 split between consulting/extension and research
Focus on district consulting, case studies of partial cutting, SCBC project completion
Products:
6 extension notes on partial cutting case studies
1 report on regeneration across an environmental gradient
2 reports on partial cutting / road removal at Golden/Arrow

B. CURRENT STAFFING

The NFR Forest Sciences group has significant expertise in five key areas:

Expertise –	**current complement**	**/ if more available**
	2 hydrologists	wildlife ecology
	1 geomorphologist	(soil biodiversity; eg. Related to DRA, rehab, etc.)
	1 soil scientist	(biodiversity/Old Growth??)
	1 Ecology/biodiversity	(silviculture research????)
	1 Silv. Systems	
	1 Strategic Issues	(forest estate, silviculture, etc.)

C. KEY RESEARCH INSTALLATIONS (GEMS) EXAMPLES

Cranbrook	Gold Creek Watershed
Invermere	EFMPP - Long-term Soil Productivity
Columbia	Mount Seven Silviculture Systems Trial
Boundary	Italy/Sutherland Rootrot Trials
Arrow	Ice Road Silviculture Systems Trial
Kootenay Lake	West Arm Demonstration Forest - Climate and Sediment Monitoring

D. FOREST SCIENCE ADVISORY GROUP (FSAG)

The main objective of FSAG is to, through ongoing communication amongst management, research scientists and end users, recommend general priorities and operating principles for scientific endeavors (the accumulation and dissemination of knowledge from research). Annual decisions lead to a recommended program/business plan and recommended budget.

In addition, the FSAG provides a forum for review of adaptive (crisis) management success and make recommendations for future adaptive management. A complete terms of reference is available on request.

FSAG helps implement the process and check details of plans and overall performance (goods delivery). RMT approves Plan and Reporting out, twice annually, as outlined below.

Forest Scientists	→ **FSAG**	→ **RMT**
Strategic Plan, 1 hr each	prioritize/approve	approval (September to November)
Ext/Res Done, 1 hr each 3-5 yr planning	performance priorities/approval	accountability (February)
Budgeting requests	Budget committee function	Budget approval process

F. PRIORITIES (What Our Clients Told Us They Need)

Priorities are identified by management directive, district meetings, and client needs surveys. These are summarized below:

SHORT-TERM: Ministry: AAC, Costs, Legal (FPC)
(legal includes providing technical support for decisions and determinations, and providing interpretations regarding FPC Act implementation, etc.)

- reduce industry costs while maintaining environmental standards (cost driver initiative)
- enhance short term fibre supply (STI) and AAC (IFPA, Invermere EFMPP, ERDZs, other AAC mitigation projects)
- support FPC implementation and evolution
- implement C&E and quality assurance programs
- support TSR II
- implement KBLUP (resolve inconsistencies with FPC, implement LU strategy)

LONG-TERM: Legislative (public's desire as reflected in legislation, as civil servants, streamlining assessments, ensuring level playing field, ensuring scientifically correct and not overly conservative – ensure good stewardship)
Demonstrate sustainable forest management (long term productivity)

Pre-amble to the FPC "adequately manage and conserve"
Soil productivity and water as the "primary resources"

***Regional priorities*:**

AAC-related

* critical landbase has mature high-volume stands; least important landbase is NSR and or has low site productivity
* rate and/or scheduling of harvest issues, such as greenup/adjacency or forest cover constraints
* research-based productivity shifts; tree improvement, silvicultural selection systems, root rot dynamics, etc

Geographical issues

* management units with large potential for imminent falldown

Strategic

* adequately manage and conserve forest resources
* largest (AAC) return for least investment
* immediacy of return
* filling gaps in good stewardship

F. GEISLER'S "SETTING PRIORITIES" OVERHEADS

SETTING PRIORITIES: AAC EFFECTS

EFFECTS ON TSR BASE CASE

FIRST LANDBASE WITH MATURE

SECOND COVER/ADJACENCY

THIRD PRODUCTIVITY OF THE LANDBASE

EFFECTS BY GEOGRAPHIC AREA

FIRST THOSE WITH IMMINENT FALLDOWN

LAST "FLATLINERS"

SETTING PRIORITIES: STANDING TIMBER INVENTORY (COSTS)

PERMIT APPROVAL ISSUES

ASSESSMENT ISSUES

FIRST OLD AND MATURE ATTRIBUTES
PATCH SIZE

SECOND CARIBOU AND UNGULATE WINTER RANGE GUIDELINES

THIRD EQUIVALENT CLEARCUT AREA AND PARTIAL CUTTING

SETTING PRIORITIES: LEGISLATIVE / POLICY

KEEP EVERYONE OUT OF COURTS

CONSISTENT WITH THE "SCIENCE"

G. SUMMARY OF MOF FOREST SCIENCE PROGRAM REVIEWS:

NFR Review:

- retain a visible, functioning Forest Sciences presence
- refocus research on to current and shorter term Ops Div and regional priorities through the creation of a Forest Sciences Advisory Group (FSAG). As confirmed by Ross Tozer's letter of 10/20/97, "The main objective of the FSAG is to provide, through ongoing communication amongst management, research scientists and end users, a process to establish general priorities for scientific endeavors."
- maximize benefits from coordination and collaboration of all research (e.g. enhance coordination with Research Branch, enhance integration of efforts through initiatives such as WADF and the Invermere Enhanced Forest Management Pilot Project)

Ops Div Review:

- publicly confirm support for Forest Sciences programs (Janna Kumi letter, June, 1998)
- improve accountability (annual review/reporting, establish advisory groups)
- improve coordination with Research Branch (establish corporate board of directors)
- confirm effectiveness through independent peer review
- work with For Div to advocate FS interests within external advisory processes
- pursue partnerships for efficient use of limited funds and to enhance extension capacity
- establish a task force to recommend improvements to internal communications and to develop a funding strategy

Research Branch Review:

- provide leadership, direction, and focus for all forest sciences activities within the Forest Service
- ensure branch resources are directed at the most important client needs and that client expectations are met
- improve awareness, accessibility, and application of research information and expertise by establishing effective internal and external communication and extension mechanisms.
- produce research information that enables forest managers to achieve effective multi-resource management for the benefit of diverse resource users
- ensure the research program is responsive to new and changing client demands for knowledge and improved technology
- increase the presence and profile of Research Branch staff in responding to high priority ministry issues, client needs, and business challenges
- maintain the credibility of Research Branch staff and their work by delivering authoritative forest sciences knowledge
- acquire and allocate resources efficiently and effectively to support the high priority forest sciences needs of the ministry

H. ENVIRONMENTAL SCAN (TRENDS AND DRIVERS)

At the extension basics workshop held in June of 1998 we spent considerable time looking at current trends and drivers to get a better sense of the environment we are working in and to develop some insight as to existing and future directions the ministry may move in. Being able to anticipate these directions should, theoretically, help define current and upcoming information needs and the role we might play in meeting

those needs. We considered social, economic and technical trends at the global, national, provincial, regional, and local levels. Some key trends are noted below:

Global:

- environmentalism
- green certification
- competition for wood products markets
- technology (instant information, internet, satellite imagery, GIS)
- population growth
- growth in wood products consumption
- multilateral agreements/conventions (e.g. biodiversity)

National:

- aging population
- shrinking government
- shrinking transfer payments and expenditures
- softwood trade agreements
- urbanization
- destruction of east and west coast fisheries

Provincial/Regional:

- restricted US market
- weak Asian markets
- aac falldown
- increasing forestry litigation
- increasing deregulation and professional accountability
- increasing diversity of forest products (e.g. botanicals)
- well organized environmental lobby
- conflicts over working forest vs. parks/protected areas
- conflicts over "lighter hand on the land" vs. reality of natural disturbances like fire
- forestry is increasingly complex
- social pressures driving practices (e.g. partial cutting)
- FPC and increased harvesting costs
- lack of MOF clarity/vision
- MOF involved less in operations, more in planning and C&E

Local:

- extremely diverse/complex ecosystems and topography
- increasing importance of water as primary resource value
- well organized environmental lobby
- increased logging in watersheds and visually sensitive areas
- increased public participation (e.g. WADE)
- increased use of team approach to address issues
- stress levels increasing and morale decreasing for MOF, licensees, enviros
- FPC and KBLUP management framework

- STI and AAC pressures

I. LISTS OF CLIENT-NEEDS DOCUMENTS:

SIFERP Client Needs Survey:

- legal obligations under the FPC
- technical advice on best practices and specific management applications
- effects of harvesting on water quality, quantity and timing of flow (with respect to fish and domestic water supplies)
- riparian management practices
- slope stability
- soil erosion, disturbance
- wildlife habitat assessment and management
- Forest Development Plans
- silvicultural systems (partial cutting to meet non timber values, pros and cons of clearcutting)
- environmentally sustainable practices (case studies)
- fire maintained ecosystems
- root disease and other forest health practices
- cost-benefit information

ILMA:

- growth and yield (managed vs. natural stand site indices, old growth site indices, modeling tools, inventory information)
- water quality and quantity (ECAs and going beyond 20%, widening FPC "in-stream windows")
- slope stability
- soil productivity
- biodiversity (general guidelines, definition of old growth, more accurate NDT mapping, is 10-45-45 rule realistic?)
- forest health (root disease and stand productivity, general forest health treatment)
- wildlife (grizzly, caribou and ungulate guidelines)
- reforestation (retrospective of rehab, natural vs. planted regeneration in the ESSF, accelerating greenup and time to free growing, stand dynamics of different silvicultural systems vs. natural stands)

MOF Management:

- reduce industry costs while maintaining environmental standards (cost driver initiative)
- enhance short term fibre supply (STI) and AAC (IFPA, Invermere EFMPP, ERDZs, other AAC mitigation projects)
- support FPC implementation
- implement C&E and quality assurance programs
- support TSR II
- implement KBLUP (resolve inconsistencies with FPC, implement LU strategy)

Cost Driver Initiative:

- expand in-stream works windows
- continue review/rationalization of biodiversity guidelines and impact evaluation
- resolve KBLUP/Code issues (e.g. 3m vs. 2m greenup) and constraints on wood supply

- clarify/simplify stream classification
- develop ocular estimates of soil disturbance

FPC I-Team:

- cost drivers
- greenup (KBLUP vs. FPC, objectives)
- biodiversity, OGMAs
- stream definition, fish stream identification, stream crossings
- ERDZs
- caribou management strategy
- cutblock size
- coarse woody debris strategy
- density management

exceeding soil disturbance limits temporarily

List of Reference Documents

- SIFERP Client Needs Survey
- ILMA Needs Survey
- MOF Corporate and Regional Priorities
- MOF Extension Basics Workshop (June '98)
- MOF Extension Strategy Workshop (Dec. '98)
- SIFERP Workshop (Sept. '98)
- Research Branch Strategic Plan
- Ops Div Research Review ("The Role of Research Teams Within Ops Div")
- Regional Cost Driver Report
- FPC I-Team December Minutes

Letter from Janna Kumi, ADM Operations, regarding "Research"